UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,777	12/01/2000	Hitoshi Sato	Y-176	8078

7590 02/05/2003

Dellett & Walters
Suite 1101
310 SW Fourth Avenue
Portland, OR 97204

EXAMINER	
MOUTTET, BLAISE L	
ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 02/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/701,777	SATO, HITOSHI	
	Examiner	Art Unit	
	Blaise L Mouttet	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Applicant's amendment entered January 24, 2003 has overcome the prior claim objection.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 4-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karaki US 5,699,492 in view of Klassen US 5,515,479 and Albosta et al. US 4,908,638.

Karaki discloses, regarding claim 1, an ink jet recording method which receives a command and data which indicates a drawing of a thick line or a filled in area (column 2, lines 26-34), analyzes the command by an interpreter (column 2, lines 35-38), converts vector into raster data based on a specified data pattern which contains a predetermined matrix of ON and/or OFF dots (i.e bitmap data) after the analysis (column 5, lines 40-50) and, based on the raster data, ejects ink drops from inkjet printer (3), said method comprising the steps of:

before converting the vector data to the raster data, checking by an interpreter (15) whether the data pattern indicates solid-drawing in a thick line or filled in area for which drawing is indicated in order to reduce processing time (column 4, lines 17-28, column 1, line 64 - column 2, line 13).

Karaki discloses, regarding claim 7, an inkjet device comprising:

an interpreter (15) for analyzing a command and data which indicates the drawing of a thick line or a filled in area in order to reduce processing time (column 4, lines 17-28, column 1, line 64 - column 2, line 13);

means (17) for converting vector data of the thick line or filled in area into raster data based on a given data pattern after the analysis by the interpreter (column 5, lines 40-50); and

a recording head (3) for ejecting ink drops, based on the raster data (column 3, lines 41-45).

Karaki discloses, regarding claims 5 and 11, that the discriminated data is data for printing black ink (column 4, lines 17-28).

Karaki fails to disclose, regarding claims 1 and 7, a pattern changing means included in the interpreter (15) for checking if the data pattern specified to a particular thick line or filled in area indicates solid-drawing and if so changing the data pattern for that particular thick line or filled in area to a lower-density pattern.

Karaki fails to disclose, regarding claims 2 and 8, pattern changing performed by using a predetermined mask pattern from a mask table.

Karaki fails to disclose, regarding claims 4 and 10, that if the thickness of the line is less than a predetermined thickness no change is made to the data pattern even if solid drawing is indicated.

Karaki fails to disclose, regarding claims 1, 6, 7 and 12, that the method is performed in a single pass recording mode wherein bands printed by movement of the recording head correspond to a width of a recording portion of a recording head.

Klassen discloses, regarding claims 1 and 7, a pattern changing means (figure 1) for checking if a data pattern indicates high ink coverage and if so changing the data pattern to a lower-density pattern (column 2, line 66 - column 3, line 16).

Klassen discloses, regarding claims 2 and 8, the pattern changing performed by using a predetermined mask pattern from a mask table (from masking logic 42 as explained in column 7, lines 37-42).

Klassen discloses, regarding claims 4 and 10, that if the density of an image is less than a predetermined density no change is made to the data pattern even if solid drawing is indicated (column 6, lines 3-6).

Albosta et al. discloses, regarding claims 1, 6, 7 and 12, that an inkjet recording method is performed in a single pass recording mode wherein bands printed by movement of the recording head correspond to a width of a recording portion of a recording head when high print speed is desired (column 4, lines 7-28, column 5, lines 61-66).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to include the pattern changing means of Klassen in the interpreter of Karaki.

The motivation for doing so would have been in order to achieve the benefits of faster processing time as taught by column 1, line 64 - column 2, line 2 of Karaki and reduce ink overloading as taught by column 2, line 66 - column 3, line 16 of Klassen.

It would have been obvious for a person of ordinary skill in the art at the time of the invention to utilize a single pass recording mode in the method and apparatus of Karaki.

The motivation for doing so would have been to achieve higher print speed as taught by column 5, lines 61-66 of Albosta et al.

3. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karaki US 5,699,492 in view of Klassen US 5,515,479 and Albosta et al. US 4,908,638, as applied to claims 2 and 8, and further in view of Mizutani US 5,774,146.

Karaki in view of Klassen and Albosta et al. fail to disclose choosing from a plurality of mask patterns the mask pattern appropriate to the recording medium.

Mizutani discloses choosing from a plurality of mask patterns the mask pattern appropriate to the recording medium in a printing device (column 5, lines 8-17, abstract).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to choose from a plurality of mask patterns the mask pattern

appropriate to the recording medium as taught by Mizutani in the apparatus and method of Karaki in view of Klassen and Albosta et al.

The motivation for doing so would have been in order to properly compensate for ink permeation into the recording medium by adjusting the printmask as taught by column 2, lines 4-18 and column 5, lines 8-16 of Mizutani so that a proper image can be formed.

Additional Prior Art

4. Rumph et al. US 6,341,020 is provided as background art in utilizing attribute data in object based rendering in an inkjet printer (see column 2, lines 3-50 in particular).

Pocket Guide to Digital Printing by Frank Cost pgs 113-124 provides background on vector to raster transformations in digital printing.

Response to Arguments

5. Applicant's arguments filed January 24, 2003 have been fully considered but they are not persuasive.

The applicant has argued that

a) Karaki '492 fails to disclose, as claimed, the aspect that the interpreter checks whether the specified data indicates solid drawing in the thick line or filled in area for which the drawing is indicated in a system which converts vector data of the thick line or

the filled in area into raster data based on a specified data pattern which contains a predetermined matrix of ON and/or OFF dots.

b) Karaki '492 fails to disclose, as claimed, that if the data pattern specified to a thick line or filled in area indicates solid drawing changing the data pattern for that particular thick line or filled in area to a data pattern of a lower density.

c) Klassen '479 fails to disclose, as claimed, that the reduction in pattern density is done in an interpreter prior to the rasterization which generates the bitmap data.

d) The combinations of Karaki '492 and Klassen '479 as presented in the applied rejection fail to render obvious applicant's claims.

e) The feature of claims 4 and 10 of the thickness of a given thick line not being reduced if it is smaller than a predetermined thickness has not been properly considered in the examiner's rejection.

Regarding applicant's first point the examiner strongly disagrees. The recitation of the attribute acquisition means in column 2, lines 26-34 of Karaki clearly covers the object attributes of drawing information (i.e. positions, sizes and colors) which correspond to whether or not a drawn line is thick or filled-in. The drawing information is vector data to be converted into the rasterized bitmap data by rasterizer (17).

Regarding applicant's second point the examiner notes that Karaki is not relied upon to teach this aspect. Klassen provides the teaching and motivation for this aspect of the claimed invention.

Regarding applicant's third point this is a piecemeal argument since the applicant is considering Klassen alone rather than in combination with Karaki as put forward in the applied rejection.

Regarding applicant's fourth point the examiner strongly disagrees. While Karaki has as one primary embodiment the determination between true black and process black this does not minimize the larger teaching provided by Karaki. Karaki is concerned with area discriminating procedures for objects to be printed and in particular the processing time needed to accomplish such area discriminating procedures from drawing attribute information as described in column 1, line 55 - column 2, line 13. The inferiority of bitmap analysis is clearly realized by Karaki who goes on to teach using an interpreter (attribute acquisition means) to analyze the area of objects to be printed prior to the rasterization stage (column 2, lines 26-34). Presented with the teachings of Klassen in which the importance of ink density reduction by altering a data pattern used to print when the ink coverage is too high one of ordinary skill would place the pattern changing means in the interpreter to reduce ink overloading.

Regarding applicant's fifth point the examiner maintains that the teaching of a lower threshold to the reduction in density of a drawn image as taught by column 5, line 60 - column 6, line 6 of Klassen is equivalent to maintaining a lower threshold thickness of a drawn image since at least textual information (inherently consisting of lines with a given thickness) is taught to be part of the image information analyzed (see column 2, lines 58-67 of Karaki).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Blaise Mouttet whose telephone number is (703) 305-3007. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow, Jr. Art Unit 2853, can be reached on (703) 308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Blaise Mouttet January 30, 2003

Bm 1/30/2003

HAI PHAM
PRIMARY EXAMINER